WHAT IS CLAIMED IS:

1. A method for removing hair from a patient's skin, said method comprising:

transcutaneously focusing high intensity acoustic energy at hair follicles beneath the skin.

2. A method as in claim 1, wherein the acoustic energy is focused at predetermined follicle locations.

3. A method as in claim 2, wherein said follicle locations are determined by acoustic imaging.

4. A method for removing hair from a patient's skin, said method comprising:

scanning an acoustic transducer over the skin surface to identify locations of the hair follicles beneath the skin; and

transcutaneously focusing high intensity acoustic energy at at least some of the identified follicle locations.

5. A method as in claim 4, wherein the high intensity acoustic energy is transcutaneously focused from an acoustic transducer.

6. A method as in claim 5, wherein a single acoustic transducer is used both to scan for the hair follicle locations and to deliver the focused high intensity acoustic energy.

7. A method as in claim 5, wherein different acoustic transducers are used for scanning for the hair follicle locations and for delivering the focused high intensity acoustic energy.

8. A method for removing hair from a patient's skin, said method comprising:

immobilizing a transducer platform over a target area of the patient's skin;

scanning an acoustic transducer over the skin to determine the locations beneath the skin of hair follicles relative to the mobilized transducer platform;

positioning an acoustic transducer over the skin at at least some of the determined locations relative to the immobilized platform; and

transcutaneously focusing high intensity acoustic energy at hair follicles from the positioned acoustic transducer.

9. A method as in claim 8 wherein scanning comprises mechanically advancing the transducer in X- and Y-directions over an imaging plane to known coordinates.

10. A method as in claim 9, wherein positioning comprises mechanically advancing the transducer in X- and Y- directions to the same coordinates.

11. A method as in claim 1, 4, or 8, wherein transcutaneously focusing comprises adjusting the depth of focus.

12. A method as in claim 11, wherein adjusting the depth of focus comprises translating a transducer along a vertical line.

13. A method as in claim 11, wherein adjusting the depth of focus comprises adjusting the curvature of a transducer surface.

14. A method as in claim 11, wherein adjusting the depth of focus comprises controlling the operation of a phased array transducer.

15. A method as in claim 1, 4, or 8, wherein the high intensity acoustic energy is focused at a depth beneath the skin in the range from 1 mm to 6 mm and at a width in the range from 0.1 mm to 0.3 mm.

16. A method as in claim 15, wherein the high intensity acoustic energy is delivered under conditions selected to raise the temperature at the hair follicle to at least 50°C for a time of at least 0.1 sec.

17. A method as in claim 16, wherein the ablative energy is delivered in an amount from 0.1 J to 10 J to each hair follicle.

18. A method as in claims 4 or 8, further comprising producing an image of the scanned hair follicle locations.

19. A method as in claim 18, further comprising designating which of the hair follicles for which locations have been scanned and to be ablated.

20. A system for hair removal, said system comprising:

a transducer selectively operable to image hair follicle locations and to acoustically ablate hair follicles at said imaged locations;

means for tracking the location of the transducer over a patient's skin surface; and

a controller for acquiring image data from the transducer and directing high intensity acoustic energy to selected ones of the imaged hair follicles.

21. A system as in claim 20, wherein the tracking means comprises:

a transducer platform adapted to be engaged against the patient's skin; and

a drive system for advancing the transducer over a planar region defined by the platform, wherein the position of the transducer can be both selected and recorded.

22. A system as in claim 21, wherein the drive system is a X- Y motion positioner.

23. A system as in claim 22, wherein the X- Y motion positioner is repeatable to ± 0.01 mm.

24. A system as in claim 1, 4, or 8, wherein the high intensity acoustic energy is focused at a depth beneath the skin in the range from 1 mm to 6 mm and at a width in the range from 0.1 mm to 0.3 mm.

25. A system as in claim 24, wherein the high intensity acoustic energy is delivered under conditions selected to raise the temperature at the hair follicle to at least 50°C for a time of at least 0.1 sec.

26. A system as in claim 24, wherein the ablative energy is delivered in an amount from 0.1 J to 10 J to each hair follicle.

27. A system as in claim 20, further comprising a display which provides a visual depiction of the hair follicle locations.

28. A system as in claim 27, further comprising means for a user to designate which of the hair follicles in the visual depiction are to be ablated.